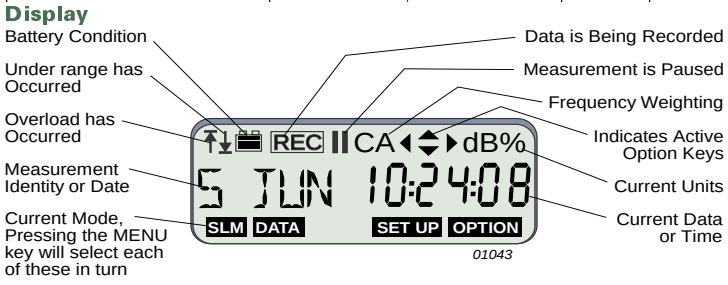
Introduction

The instruments in the CEL-320/360 Series consist of the instrument unit shown, plus CEL-6681 Dosimeter Microphone and Cable, or CEL-425 Microphone Adaptor.

Display



Preparation

Connect a 9 V battery (6LF22) to the terminals in the battery compartment in the rear of the instrument. DO NOT disconnect the battery once runs have been stored; they will be lost.

With the instrument switched OFF, insert the cable connector of the Dosimeter Microphone or the Microphone Adaptor into the socket in the top end of the case with the red dot facing the front of the dosimeter.

Operation of the instrument is achieved by a simple sequence of key strokes.

Field Accuracy Check

Use a CEL-282 (Class 2) or CEL-284/2 (Class 1) Calibrator to perform a field accuracy check (acoustic calibration) each time the instrument is switched ON and again at the end of measurement.

Fit the CEL-4725 Coupler (supplied with the calibrator) into the calibrator cavity, making sure it is firmly in contact with the shoulder in the cavity.

Fit the microphone into the coupler cavity, again making sure it makes contact with the shoulder in the in the cavity.

Switch the calibrator ON and proceed as follows.

Operation	Press	Display Shows	Comments
1. Switch instrument ON	⏻	5 JUN 10:24:08 DATA	Start Up messages showing Instrument Type, Serial number (if set), Print (only when the print cable is connected in place of a microphone), Firmware Version, finishing with last used Operating Mode.
2. Change Mode	MENU repeatedly	CAL 112.3 OPTION	Select Option to allow Acoustic Calibration. The display shows the current SPL.
3. Enable Level Change	↵	CAL 112.3 OPTION	△ and ▽ are now enabled. The display shows the current SPL.
4. Change Indicated Level	△ (or ▽)		Indicated level rises (falls) 0.05 dB for each key press. Adjust to correct level for CEL-320/360 microphones at standard temperature and pressure = **113.6 dB**.
5. Set (Accept) Calibration Level	↵	CAL 113.6 OPTION	The 113.6 dB calibration level is now set, and will be stored by the microphone assembly.

Select Dose Measurement Set Up

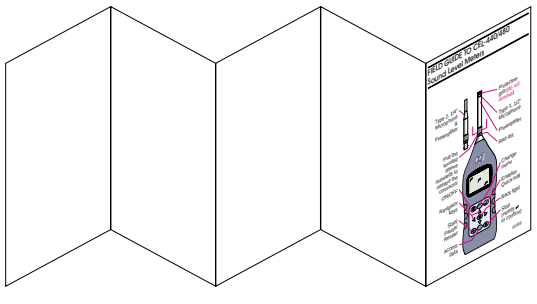
1. Change Operating Mode	MENU sufficient times	OSHA LOAdEd SET UP	The first display always shows the currently loaded set up: for example OSHA dose measurement.
2. Select another Setup	▽ several times	NOIS SET UP	Select a set up from: OSHA procedures Q = 5, Crit 90 dB, A-wtd levels >80 dB and >90 dB, MSHA procedures Q = 5, Crit 90 dB, A-wtd levels >80 dB and >90 dB, DOD procedures Q = 4,
	For further information on set ups, consult the User Manual.		Crit 85 dB, A-wtd levels >80 dB, ACGIH procedures Q = 3, Crit 85 dB, A-wtd levels >80 dB, ISO85 procedures Q = 3, Crit 85 dB, A-wtd levels >70 dB, ISO90 procedures Q = 3, Crit 90 dB, A-wtd levels >70 dB, special procedure for logging noise data as SLM.
3. Load Selected Setup for use	↵	ISO90 LOAdEd SET UP	A Loaded message shows that the selected Setup is now active: for example ISO procedure with 90 dB Criterion.

Measure and Store Dose Data

1. Change Operating Mode	MENU Sufficient times	5 JUN 10:24:08 DATA	Dose Measurement. Dose data will be saved in the next available data store.
2. Start Run (Store Data)	▶II	WAIT 32 DATA	When the run timer of a CEL-360 is ON with beginning and End Times set, the instrument waits counting back the time remaining until the run starts. When the run timer of a CEL-360 is ON with Sync on, the instrument waits until the clock is synchronised with any selected profile time before the run starts. With a CEL-320 or when the run timer of a CEL-360 is OFF, the instrument waits for the next whole clock second, then starts the run.
3. Then		REC 5 JUN 10:39:24 DATA	The REC icon indicates that the instrument is now storing data in the first available store.
4. Inspect data from the Current Run	DATA	REC RUN 4 3 DATA	The display shows where data from the current run is being saved (store 4), and on a CEL-360 indicates the number of completed profile periods (3).
5. Inspect further data from the Current Run	▷ sufficient times	Data from Current Run. Displays will be updated while the run is in progress.	The display cycles through data from the current run. Some of the display screens offer △ and ▽ options that show further parameters.
6. If Required	▶II	Pause the run (II icon).	Press again to resume the run.

Cut lines

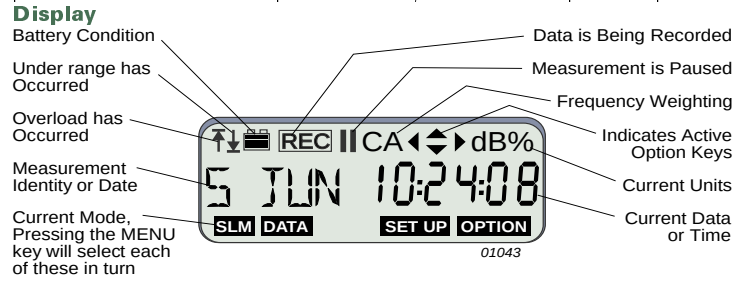
4 folds as shown



Introduction

The instruments in the CEL-320/360 Series consist of the instrument unit shown, plus CEL-6681 Dosimeter Microphone and Cable, or CEL-425 Microphone Adaptor.

Display



Preparation

Connect a 9 V battery (6LF22) to the terminals in the battery compartment in the rear of the instrument. DO NOT disconnect the battery once runs have been stored; they will be lost.

With the instrument switched OFF, insert the cable connector of the Dosimeter Microphone or the Microphone Adaptor into the socket in the top end of the case with the red dot facing the front of the dosimeter.

Operation of the instrument is achieved by a simple sequence of key strokes.

Field Accuracy Check

Use a CEL-282 (Class 2) or CEL-284/2 (Class 1) Calibrator to perform a field accuracy check (acoustic calibration) each time the instrument is switched ON and again at the end of measurement.

Fit the CEL-4725 Coupler (supplied with the calibrator) into the calibrator cavity, making sure it is firmly in contact with the shoulder in the cavity.

Fit the microphone into the coupler cavity, again making sure it makes contact with the shoulder in the in the cavity.

Switch the calibrator ON and proceed as follows.

Operation	Press	Display Shows	Comments
1. Switch instrument ON	⏻	5 JUN 10:24:08 DATA	Start Up messages showing Instrument Type, Serial number (if set), Print (only when the print cable is connected in place of a microphone), Firmware Version, finishing with last used Operating Mode.
2. Change Mode	MENU repeatedly	CAL 112.3 OPTION	Select Option to allow Acoustic Calibration. The display shows the current SPL.
3. Enable Level Change	↵	CAL 112.3 OPTION	△ and ▽ are now enabled. The display shows the current SPL.
4. Change Indicated Level	△ (or ▽)		Indicated level rises (falls) 0.05 dB for each key press. Adjust to correct level for CEL-420/460 microphones at standard temperature and pressure = **113.6 dB**.
5. Set (Accept) Calibration Level	↵	CAL 113.6 OPTION	The 113.6 dB calibration level is now set, and will be stored by the microphone assembly.

Select Dose Measurement Set Up

1. Change Operating Mode	MENU sufficient times	OSHA LOAdEd SET UP	The first display always shows the currently loaded set up: for example OSHA dose measurement.
2. Select another Setup	▽ several times	NOIS SET UP	Select a set up from: OSHA procedures Q = 5, Crit 90 dB, A-wtd levels >80 dB and >90 dB, MSHA procedures Q = 5, Crit 90 dB, A-wtd levels >80 dB and >90 dB, DOD procedures Q = 4,
	For further information on set ups, consult the User Manual.		Crit 85 dB, A-wtd levels >80 dB, NIOSH procedures Q = 3, Crit 85 dB, A-wtd levels >80 dB, ISO85 procedures Q = 3, Crit 85 dB, A-wtd levels >70 dB, ISO90 procedures Q = 3, Crit 90 dB, A-wtd levels >70 dB, Meter special procedure for logging noise data as SLM.
3. Load Selected Setup for use	↵	ISO90 LOAdEd SET UP	A Loaded message shows that the selected Setup is now active - for example ISO procedure with 90 dB Criterion.

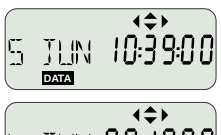
Measure Dose

1. Change Operating Mode	MENU Sufficient times	5 JUN 10:24:08 DATA	Dose Measurement. Dose data will be saved in the next available data store.
2. Start Run (Store Data)	▶II	WAIT 32 DATA	When the run timer of a CEL-360 is ON with beginning and End Times set, the instrument waits counting back the time remaining until the run starts. When the run timer of a CEL-360 is ON with Sync on, the instrument waits until the clock is synchronised with any selected profile interval before the run starts. With a CEL-320 or when the run timer of a CEL-360 is OFF, the instrument waits for the next whole clock second, then starts the run.
3. Then		REC 5 JUN 10:39:24 DATA	The REC icon indicates that the instrument is now storing data in the first available store.
4. Inspect data from the Current Run	DATA	REC RUN 4 3 DATA	The display shows where data from the current run is being saved (store 4), and on a CEL-360 indicates the number of completed profile periods (3).
5. Inspect further data from the Current Run	▷ sufficient times	Data from Current Run. Displays will be updated while the run is in progress.	The display cycles through data from the current run. Some of the display screens offer △ and ▽ options that show further parameters.
6. If Required	▶II	Pause the run (II icon).	Press again to resume the run.

7.	If Required	△ PLUS ▷	Lock keys and display to prevent unauthorised tampering.	The keys and display cannot be locked while the instrument is paused.
8.	If Required	◁ PLUS ▽	Unlock keys and display to restore normal operation.	
9.	Stop Run	■		Stop ? This command must be confirmed.
10.	Confirm Stop	↵		The run is now ended. DO NOT disconnect the battery once runs have been stored; they will be lost.
11.	Switch OFF	⏻	Blank Screen	No operations possible.

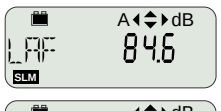
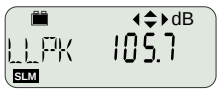
Recall Stored Dose Data

When a hard copy of stored dose data is required, BEFORE SWITCHING ON, connect a Centronics printer via both C6671 PC Cable (supplied with the dosimeter) and CEL-6672 Printer Cable.

1.	While not logging data	DATA		Enable Data Recall and see the Start Date & Time for the most recently stored run.
2.	Review Stored Runs	△ several times		Select Start Date & Time for required run. If a printer is connected and switched ON, continuing to press △ will eventually offer a PRINT ALL option that is enabled by pressing ↵.
3.	Review Stored Data	▷		Shows where data for the selected run is stored (Store 3) and on a CEL-360, indicates the number of completed profile periods.
4.	Review Stored Data	▷ repeat		If a printer is connected and switched ON, the next display shows PRINT READY, if switched OFF, the display shows PRINT OFF, otherwise the Duration is displayed as in Step 6.
5.	Print Hard Copy	↵		The display shows print messages while a data set from the selected run is printed in standardised format for the measurement protocol used.
6.	Review Stored data	▷		Display steps through all details and parameters recorded for the run, starting with duration and completes a cycle back to Date & Time display for the run. Some displays offer △ and ▽ options that show further parameters.

Operation as a Sound Level Meter

Using the red dot to aid pin location, connect a CEL-425 SLM Microphone Adaptor, perform an acoustic calibration as described above, then proceed as follows.

1.	Start from final Start Up display			The last used measurement mode will be selected.
2.	If Required Change Mode	MENU sufficient times		SLM measurement is now active with the current A-weighted Fast level (L_{AF}) displayed. SLM mode can be selected ONLY while a microphone is fitted.
3.	Review SLM Measure-ments	△ several times		The display steps to Linear Peak (L_{Lpk}) and then through all details and parameters to Duration, before completing the cycle back to the first SLM display.
4.	Change Settings	△	When ◁ and ▷ are shown on the display, the relevant navigator keys may be used to change the current settings.	
5.	Switch OFF	⏻	Blank Screen	No operations possible.

Think environment Think Casella

CASELLA CEL

CEL-320/360 Dosimeters
060335 i1/Sept 01

CEL instrumentation and software is designed, manufactured and serviced by:

Casella CEL Limited,
Regent House, Wolseley Road, Kempston, Bedford, MK42 7JY, U.K
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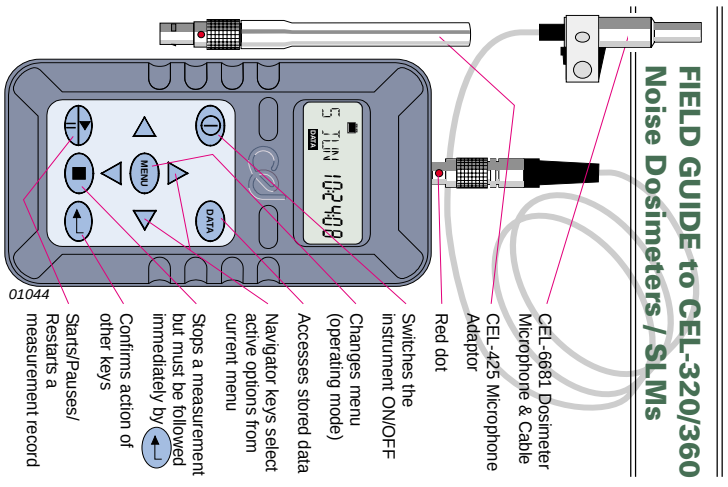
Office Phone: +1 603 672 0031 Toll Free: +1 800 366 2966 Fax: +1 603 672 8053
e-mail: us-sales@casella-cel.com.


01044
Starts/Pauses/ Restarts a measurement record
Confirms action of other keys
Stops a measurement but must be followed immediately by
Navigator keys select active options from current menu
Accesses stored data
Changes menu (operating mode)
Switches the instrument ON/OFF
Red dot
CEL-425 Microphone Adaptor
CEL-6681 Dosimeter Microphone & Cable
FIELD GUIDE to CEL-320/360 Noise Dosimeters / SLMs

7.	If Required	△ PLUS ▷	Lock keys and display to prevent unauthorised tampering.	The keys and display cannot be locked while the instrument is paused.
8.	If Required	◁ PLUS ▽	Unlock keys and display to restore normal operation.	
9.	Stop Run	■		Stop ? This command must be confirmed.
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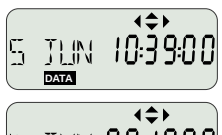
1.	While not logging data	DATA		Enable Data Recall and see the Start Date & Time for the most recently stored run.
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1.	Start from final Start Up display			The last used measurement mode will be selected.
2.	If Required Change Mode	MENU sufficient times		SLM measurement is now active with the current A-weighted Fast level (L_{AF}) displayed. SLM mode can be selected ONLY while a microphone is fitted.
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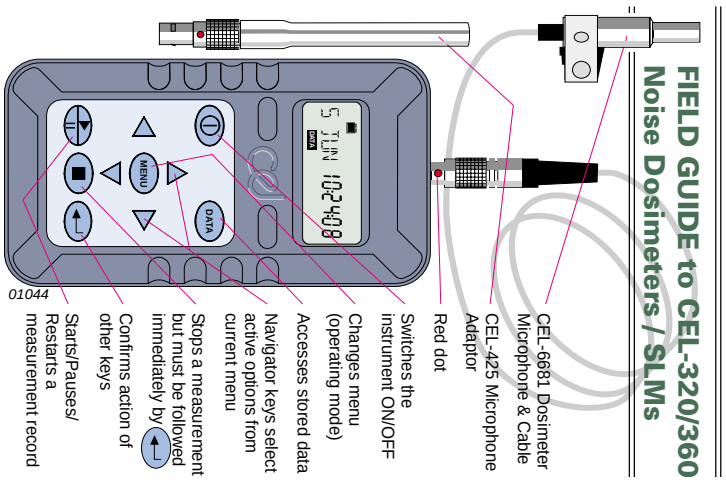
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